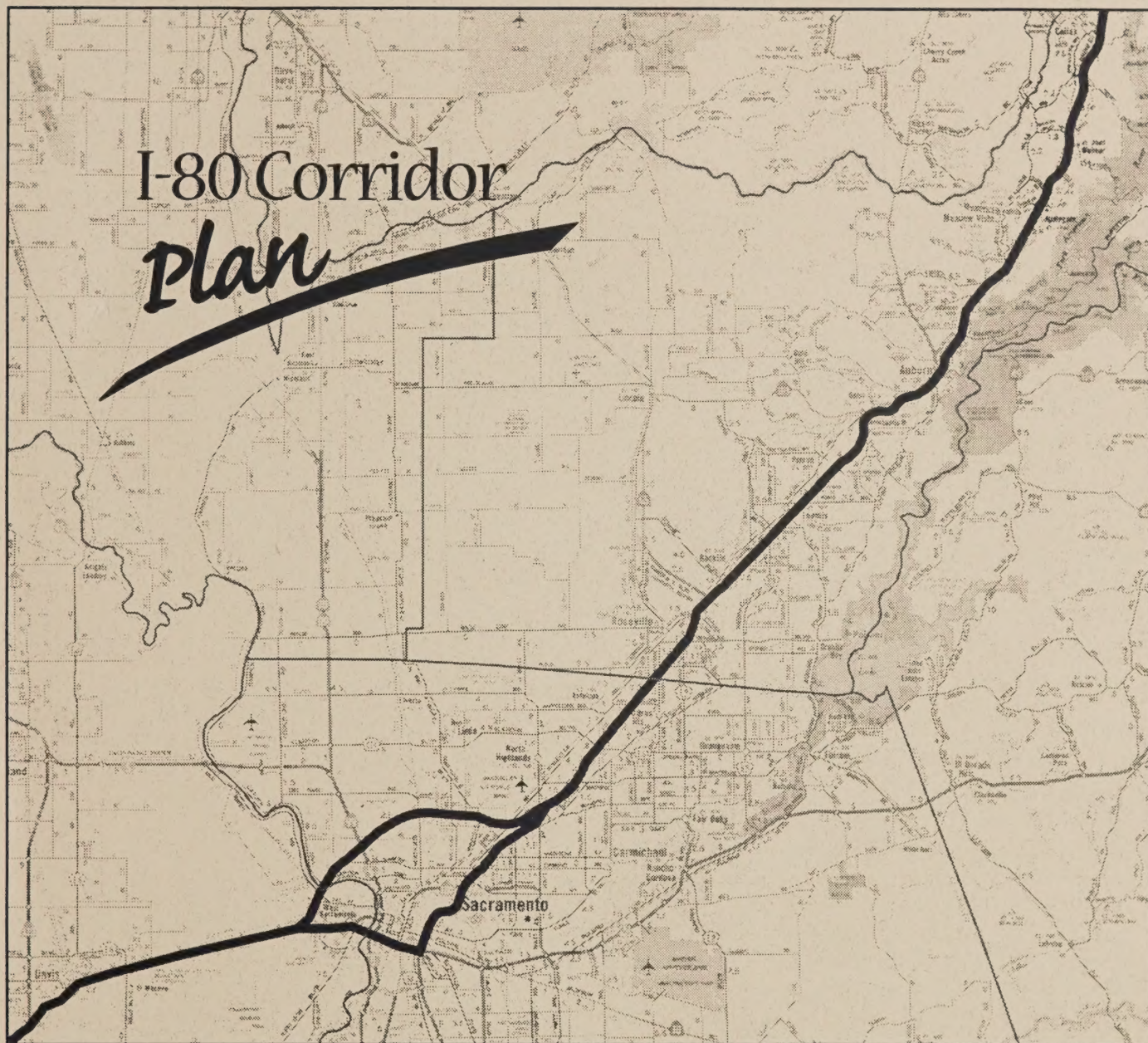




I-80 Corridor Study Investment Strategy Report

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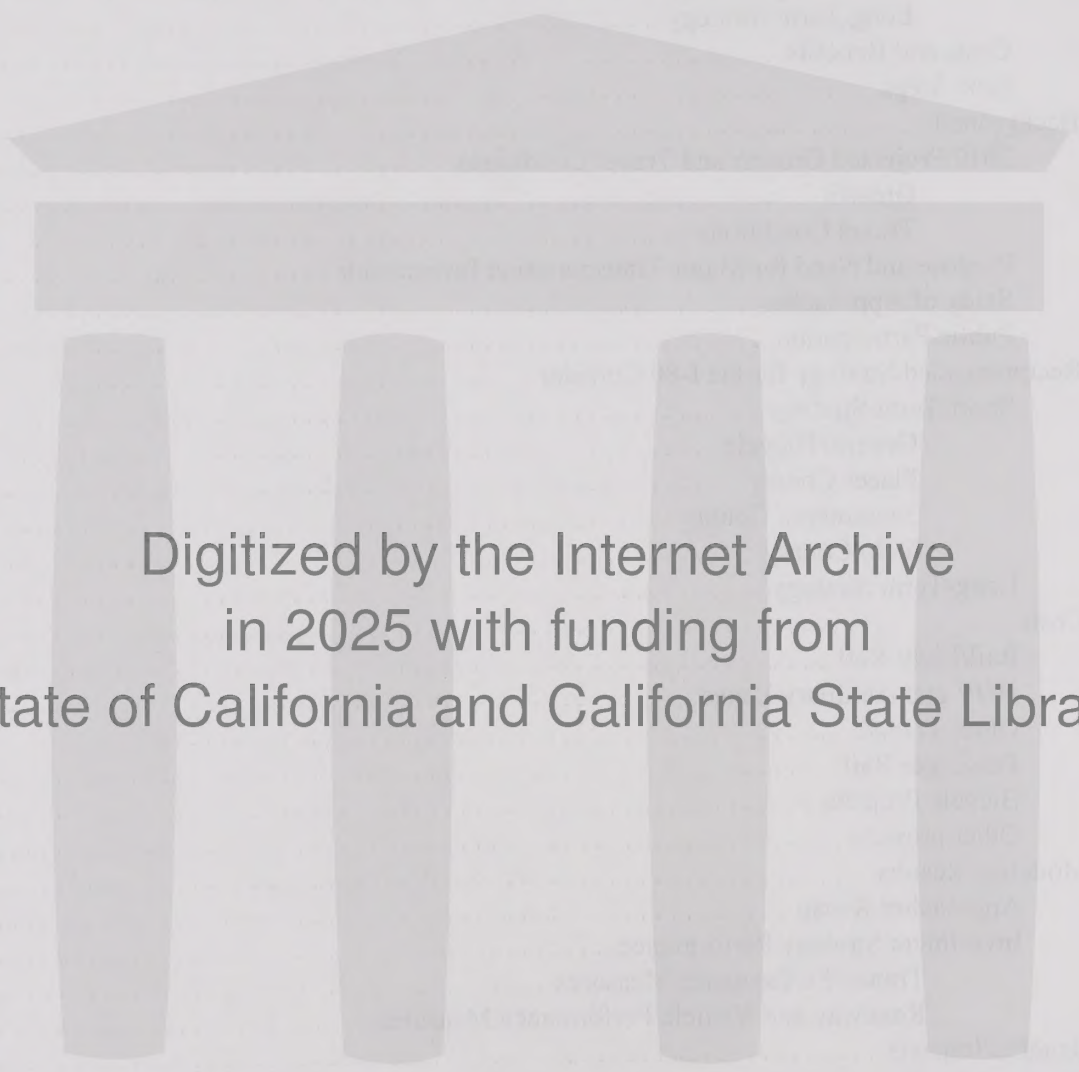
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Investment Strategy for the I-80 Corridor

Summary

This draft Strategy results from nearly four years of discussion, analysis, and consensus-building regarding future transportation improvements in the I-80 Corridor. The 63-mile corridor links the communities of Davis, West Sacramento, Sacramento, Citrus Heights, Roseville, Rocklin, Lincoln, Loomis, Auburn, and Colfax—from west to east (see Map 1).

The Strategy builds upon the I-80 Working Paper 5 - Approaches Analysis, published by SACOG in April of 2000. That paper and the several other supporting working papers form the basis for the Strategy. Full documentation of the process and technical analysis appears in Working Paper 5.

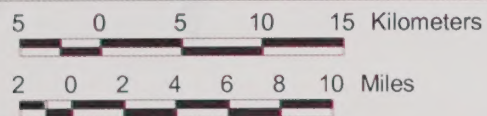
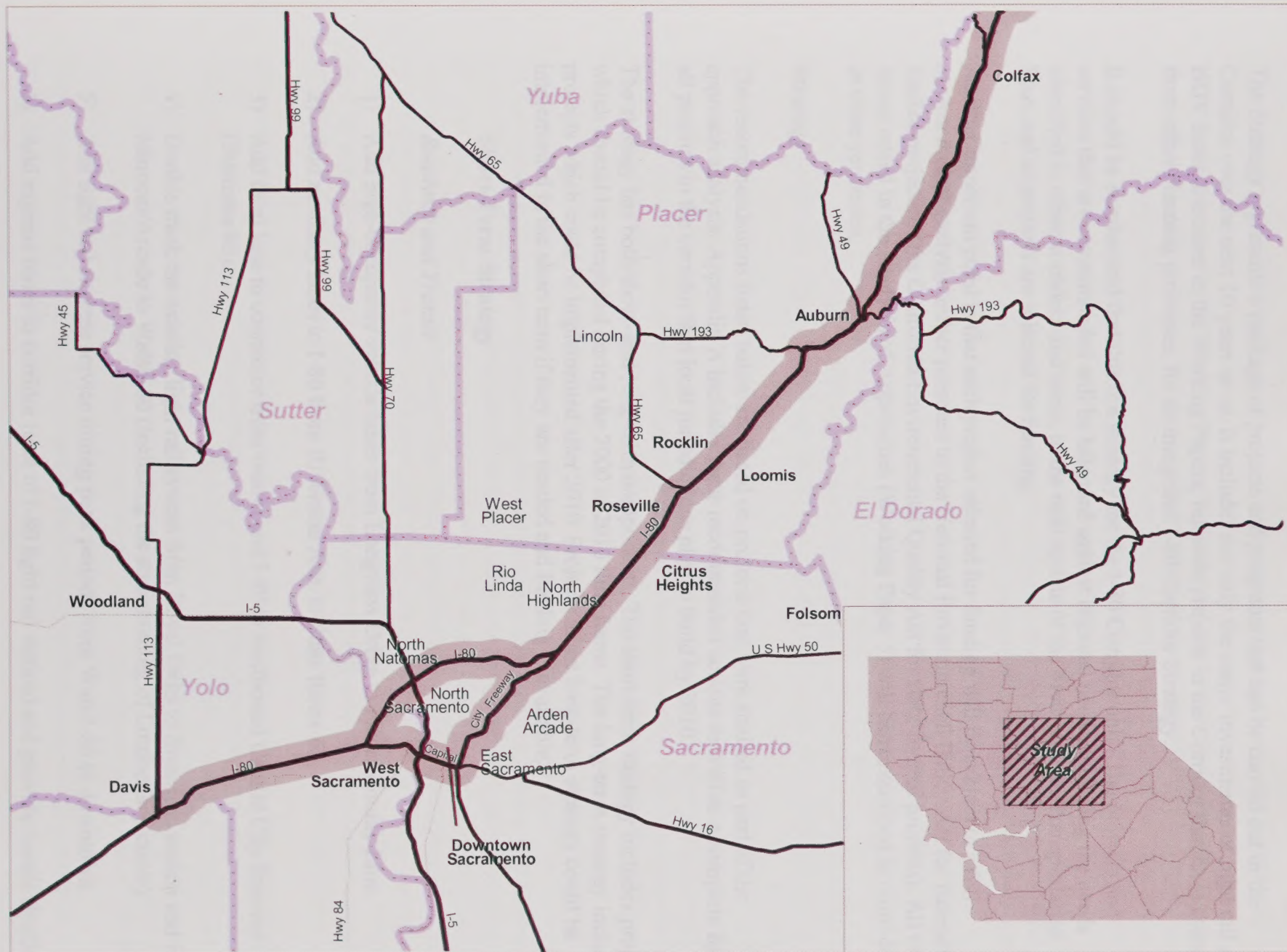
Yolo, Sacramento, and Placer Counties are developing rapidly. Population in the I-80 Corridor is expected to grow by around 28% with employment expected to grow by about 37% in the next 10 years. I-80, major local roads, limited light rail, and the bus system will not accommodate the anticipated growth in travel. Heavy congestion, particularly during weekday peak hours, will result from such growth.

The I-80 Corridor Investment Strategy takes a short to medium-long view of the transportation future of this Corridor. It sets priorities for projects in the timeframe of the next 10 years.

The goals of the Strategy are to maintain mobility and provide travel choices in the Corridor for all types of trips. When carried out, it should help alleviate vehicle congestion, encourage ridesharing, provide additional public transit (including rail and bus), and make bicycling more convenient and safe. The strategy will take advantage of existing facilities by increasing their capacity and operating them more efficiently.

Working Paper 5 included evaluations of light-rail extensions, high-occupancy vehicle lanes (also called carpool lanes), increases in bus service, bottleneck roadway fixes, and transportation management strategies. The I-80 technical advisory committee provided technical input throughout the study. The governing boards of the Sacramento Area Council of Governments (SACOG) and the Placer County Transportation Planning Agency (PCTPA) provided oversight. The technical conclusions and recommendations from the analysis of approaches were also reviewed and commented on by the steering and technical committees.

An Ad Hoc policy advisory committee composed of PCTPA and SACOG board members approved the draft Strategy contained in this report in April of 2000 and recommended that both boards of directors approve the strategy for modeling and analysis. Subsequently, those boards granted approval for staff to move forward with modeling and analysis of the recommended Investment Strategy.



Map 1
I-80 Corridor



December 1997
s:\gis\arcview\i80study\i80corr.apr
Laura Bell

The Strategy represents a package of projects and programs that can be carried out in the Corridor over the next 10 years or so. It includes not only the major investments of light rail and HOV lanes discussed in the Working Papers, but adds projects in the Corridor that have come from other planning processes, for an integrated I-80 Corridor Strategy.

It should be emphasized that this is a strategy for the I-80 Corridor only. The projects and services that are recommended will be balanced against regional needs, including the needs identified in other corridors and areas, in the next update of the Metropolitan Transportation Plan, and as projects are selected for funding.

Another important point is that each project selected for funding will be subject to a full environmental analysis (either pursuant to the National Environmental Policy Act for federally-funded projects or the California Environmental Quality Act for state-funded projects). All of the issues raised in the Analysis of Approaches (Working Paper 5) will be reexamined in more depth in those processes.

Strategy

The recommendations listed below are based on projects that were studied as part of the approach analysis: Appendix A includes these recommended actions as well as a complete list of all projects in the corridor that local jurisdictions plan to build by 2010.

The strategy has both short- and long-term components. The short-term strategy includes projects which should be completed during the 2000 to 2010 time frame. The long-term strategy includes projects which could be implemented after 2010. Projects in the long-term strategy could be implemented in the short term if they are needed and funding is available.

Short-Term Strategy

Roadway and Transit

- 1) Add high-occupancy vehicle lanes from Longview Drive to Placer County Line.
- 2) Add auxiliary lanes to I-80 from Riverside Ave. to State Route 65.
- 3) Add third lane to connector from westbound I-80 to westbound Capital City freeway (Business 80).
- 4) Double track the existing light rail system from Royal Oaks to Swanston station and from Marconi/Arcade to Watt/I-80 (including the straightening of Lumberjack curve).
- 5) Add light rail express service during peak periods from Watt/I-80 to downtown.
- 6) Add express buses in corridor (east of I-80 light rail station) and provide transit shuttles

where light rail and commuter rail intersect.

- 7) Increase Capitol Corridor service from seven round trips per day to 9 round trips per day by the end of 2000, increase to at least 10 round trips per day by 2005 and to at least 12 round trips per day by 2010; and continue to develop concepts for Truckee-Reno extension (e.g. see the Capitol Corridor Business Plan recommendations).
- 8) Sustain Yolo Bus Corridor Service between Davis, Woodland, West Sacramento, and Downtown Sacramento and increase transit service between downtown Sacramento and the airport to provide 1/2 hour service.
- 9) Provide transit shuttles where light rail and commuter rail intersect: Swanston station, Downtown Sacramento, and Roseville. There should also be an examination of providing shuttles for special events, such as the successful shuttles serving Raley's Field.
- 10) Park-and-ride lots should be maintained along the I-80 Corridor. This includes replacing defective bike lockers and keeping the park-and-ride lots in good shape, and expanded as needed.
- 11) Caltrans is in the process of conducting a study of truck traffic on I-80 through the Sierra Nevada. This study will include truck climbing lanes, acceleration/deceleration lanes, and widening possibilities. Once completed, the recommendations of this study should be considered for inclusion in either the short- or long-term strategy.

General Bicycle

- 1) There needs to be destination signage along the entire existing, planned, and proposed route paralleling I-80 from Placer County to downtown Sacramento.
- 2) Interchange or overcrossing improvements should not degrade bicycle and pedestrian access.
- 3) Parallel routes on both sides of I-80 are important to bicyclists and should be built to connect both sides in a consistent manner.
- 4) Local jurisdictions should continue to look for opportunities to provide additional and better bike/pedestrian crossings of I-80 throughout the corridor.

The local jurisdictions should continue to prioritize and fund bicycle projects according to local bikeway master plans, general plans, etc., including parallel routes both north and south of I-80. There should be at least one continuous route from downtown Sacramento to Auburn.

There are many specific bikeway, roadway, and transit projects listed in Appendix A.

Long-Term Strategy

- 1) Future light rail extensions would be determined after Regional Transit completes its Multi-Corridor Study (MCS) that will look at a number of extensions including Davis, West Sacramento, Roseville, Citrus Heights, and North Natomas/Airport.
- 2) Implement commuter rail connecting Auburn, Roseville, Sacramento, and Davis.
- 3) Those proposed and planned bike lanes/routes and bikeway projects listed in the I-80 Corridor Bicycle Plan Concepts in Working Paper 4 which are not listed as Tier 1 projects and are not high priority local projects.
- 4) Add high-occupancy vehicle lanes on I-80 from Placer County Line to State Route 65.
- 5) Add high-occupancy vehicle lanes on I-80 from I-5 to Longview Drive.

Costs and Benefits

The capital cost of the Strategy is estimated at around \$598 million (constant 1999 dollars) over 10 years. This breaks down into approximately \$202 million for the “new” projects proposed here and about \$396 million for the bike, roadway, and transit projects assumed as part of the base case (and common to all of the approaches). Operational and maintenance expenses (when lumped together also called lifecycle expenses) would cost about \$11.4 million annually.

Note that the \$396 million figure for the “common to all approach” projects is higher than reported in Working Paper 5 (\$371 million). This difference reflects the addition of the costs for the bicycle project recommendations (approximately \$25 million) to the common cost. It was agreed early in the study process that the bike plan, developed separately by a bicycle focus group to give adequate consideration to bicycle needs, would be incorporated into the Investment Strategy regardless of which approach was chosen. Impacts from the bicycle projects were thus assumed as part of the base case and not studied as separate projects. No cost figures were reported for the bicycle projects in the Investment Strategy contained in Working Paper 5 since the final bike strategy was not agreed upon until shortly before the report’s release. Subsequent to the release of Working Paper 5 the final bike strategy cost estimates were developed.

Expected benefits include quicker trips on the freeway for users of HOV lanes, decreased transit travel times and increased transit ridership, eased traffic congestion at intersections and overcrossings, improved access to employment centers, and safer, more continuous bikeways.

Next Steps

The I-80 Strategy will be considered for inclusion in the next updates of SACOG’s and PCTPA’s long-range transportation plans. Most importantly, the Strategy will help guide investment decisions as funds become available.

The Strategy is intended to be a living document that may be modified in the future. Due to the dynamic character of land-use decisions, ongoing systems studies, and the attendant effects on travel behavior, the Strategy should be considered a flexible document. It reflects our best current effort to provide a multi-modal approach to improving mobility in the I-80 Corridor in a manner that maintains a high quality of life for our communities.

1. Background

2010 Projected Growth and Travel Conditions

This section describes the current and expected future travel conditions in the I-80 Corridor and summarizes the work leading to the Investment Strategy described in Section 2.

Growth

Downtown Sacramento is currently the location of the largest amount of employment in the Corridor and will remain so in 2010. It is also expected to remain the leader in job growth because of the large redevelopment projects such as the Railyards and other developments. Roseville, however, will show a similar high level of job growth. West Sacramento and Rocklin are expected to become large employment centers by 2010 as well. East Sacramento and Arden Arcade are currently large employment areas, but will not grow much by 2010 because they are largely built out. North Highlands will lose employment through the closure of McClellan Air Force Base, and is not currently expected to recover that employment fully by 2010, although plans for the Base could accelerate that employment gain. In terms of percent growth in jobs, West Placer, Lincoln, Rocklin, North Natomas, and Pilot Hill are expected to grow significantly from current small job bases. In total, employment in the Corridor is expected to grow by 37% between 1994 and 2010. The region as a whole is expected to gain 40% in employment by 2010.

Currently, activity centers in the vicinity that generate larger than average numbers of trips in the Corridor are:

- U.C. Davis and Downtown Davis
- West Sacramento employment centers
- Sacramento International Airport
- Downtown Sacramento
- Arden Fair Mall/Point West office park
- South Natomas
- McClellan Air Force Base
- Sunrise Mall
- Roseville: Douglas Boulevard
- Roseville/Rocklin: State Route 65

The balance between job growth and housing growth will be nearly matched in this period, but it is impossible to project how this “jobs-housing balance” will affect travel in the Corridor because of the number of other factors involved. That is, there is no assurance that the jobs created will be filled by those people living in the new housing. The growth trend in housing units is expected to be roughly the same as the population trend. All together, housing units in the region are anticipated to grow by about 33% between 1997 and 2010.

The largest population totals today are in the communities of Sacramento County, including Citrus Heights, North Natomas, North Highlands, Arden Arcade, East Sacramento, and North Sacramento (see Table 1). They are expected to continue to have the largest population totals in 2010. By that time, however, Roseville will have become one of the most populous communities in the Corridor, with an increase in population of about 45,000. North Natomas, which was recently a largely undeveloped tract of land near Downtown Sacramento, is now developing rapidly and is expected to grow to a population of about 24,000 by 2010. Rocklin is projected to grow by about 21,000 people. South Natomas is expected to grow by about 18,000 people. West Sacramento, which is opening up its Southport area to development, is expected to grow by around 16,000 people. Rural areas and cities including west Placer County and Lincoln won't grow large in terms of absolute numbers, but will experience very large percentage growth in population by 2010 according to plans. All together, the communities along the Corridor are expected to increase in population by about 28% between 1997 and 2010. The region as a whole is expected to grow by nearly 40%.

Table 1. Summary of Population and Employment in Selected Corridor Communities¹				
Regional Analysis District	1997	2010	Change 1997 to 2010	Percent Change 1997 to 2010
North Natomas Population	656	24,720	24,064	3,668.3
Employment	2,303	9,129	6,826	296.4
North Highlands Population	72,866	74,553	1,687	2.3
Employment	30,161	28,686	-1,475	-4.9
Citrus Heights Population	103,833	109,032	5,199	5.0
Employment	23,598	24,334	736	3.1
South Natomas Population	37,116	55,327	18,211	49.1
Employment	18,044	27,248	9,204	51.0
North Sacramento Population	58,466	62,933	4,467	7.6
Employment	34,284	40,706	6,422	18.7
Arden Arcade Population	93,407	95,728	2,321	2.5
Employment	49,678	52,383	2,705	5.4
Downtown Sacramento Population	33,198	41,884	8,686	26.2
Employment	94,592	124,880	30,288	32.0

Regional Analysis District	1997	2010	Change 1997 to 2010	Percent Change 1997 to 2010
East Sacramento				
Population	76,363	78,224	1,861	2.4
Employment	51,437	62,839	11,402	22.2
West Sacramento				
Population	30,489	46,843	16,354	53.6
Employment	29,117	49,199	20,082	69.0
Roseville				
Population	65,633	110,588	44,955	68.5
Employment	39,512	87,872	48,360	122.4
Rocklin				
Population	28,175	49,477	21,302	75.6
Employment	11,620	21,858	10,238	88.1
Lincoln				
Population	11,282	47,465	36,183	320.7
Employment	3,675	6,806	3,131	85.2
West Placer				
Population	1,011	10,094	9,083	898.4
Employment	36	1,664	1,628	4,522.2
Loomis				
Population	13,838	21,399	7,561	54.6
Employment	2,352	3,956	1,604	68.2
¹ Numbers for the communities listed in the table are for regional analysis districts used by SACOG for analysis purposes rather than actual community numbers. Community boundaries can change over time (e.g. with annexations), but the regional analysis district boundaries can be held steady for time-series comparisons. In addition, the communities included in this table show the highest absolute or highest percentage growth of the communities in the Corridor between 1997 and 2010.				

Travel Conditions

- The I-80 Corridor is traversed by the major urban freeway, I-80, which begins in the San Francisco Bay Area, runs through Davis, Sacramento, Roseville, Auburn, Colfax and eastward. There are a number of major, east-west arterials and alternate routes within the Corridor, including State Route 160, Auburn Boulevard, and Roseville Road. There is also the light rail line running from Downtown Sacramento to I-80/Watt Ave.
- Steadily increasing weekday peak period congestion on roadways can be seen today in the following locations: the vicinity of the western and eastern I-80/Capital City Freeway interchanges, along the Capital City Freeway, on I-80 between Riverside Ave. and Northgate Blvd., and on major arterial roads, some of which serve as alternative routes to I-80. Peak travel times are unpredictable at some of these locations, which is of special concern to commuters and businesses that ship on the Corridor. The current moderate to

severe congestion is projected to more than double by 2010 and occur for a longer period of time each day.

- There is increasing congestion on I-80 during peak tourist periods (weekends, holidays, and vacations) that is especially evident in particular locations such as in Auburn.
- For freeways in the I-80 Corridor, in the AM and PM peak periods, the number of lane miles expected to experience severe congestion is expected to increase by 1% during both the AM and PM peak periods.
- For arterials, lane miles of all congested roadway categories are forecasted to increase sharply. The Level of Service F2 and F3 categories (defined as having between one and three or more than three hours of congestion, respectively) are forecasted to increase by 24 and 40 miles in the AM and PM peak periods, respectively.
- Travel times for virtually all peak direction trips (that is, eastbound from Yolo County, and westbound for the rest of the Corridor) are forecasted to increase 30% or more by 2010.
- Travel times for many off-peak direction trips are forecast to increase by more than 30%, especially for trips to Placer County.
- Light-rail boardings in the I-80 Corridor are projected to increase by about 44% between 1997 and 2010. The growth in transit passenger boardings shows that transit travel is more or less keeping up with the overall growth in travel regionwide.
- Currently, there is no bikeway within the I-80 corridor that provides a continuous route between Auburn and downtown Sacramento. This leaves no viable bicycle alternative to driving in the I-80 corridor. The I-80 and Capital City Freeways also constitute major barriers to bicyclists and pedestrians trying to get from one side of the freeway to the other.

Purpose and Need for Major Transportation Investments

The I-80 transportation corridor in Sacramento County is rapidly becoming overwhelmed by travelers, as shown by current and future congestion levels, particularly during commute periods.

A major investment study to address this rapid rise in congestion has been conducted over the past three years by PCTPA, SACOG, Caltrans, and others. The study incorporates a series of studies and reports that have been completed on different types of transportation improvements.

Several goals for considering major investments in the Corridor are:

- To maintain mobility in the face of a large increase in travel.

- To provide travel options for those who can't or don't want to use personal vehicles.
- To provide incentives to carpool or use transit.

These goals are fully consistent with the goals for transportation contained in the locally-developed Metropolitan Transportation Plan, the State's California Transportation Vision, and in Federal transportation guidance.

Study of Approaches

Five study approaches were developed for technical analysis with input from consultants, public meetings and communications to SACOG, and recommendations from the technical and policy committees. The approaches included variations of:

- *High-occupancy-vehicle (HOV) lanes on I-80 (commonly known as carpool lanes);*
- *electrified light-rail, self-propelled passenger/commuter rail, bicycle routes, and transit service expansions;*
- *transportation management techniques that promote a more efficient use of existing transportation facilities and services; and*
- *fixing important roadway bottlenecks and providing alternative routes.*

For details on the five approaches, please see SACOG's I-80 *Working Paper 4—Study Approaches*, July 1999. In general the approaches emphasized:

Approach 1 = Fixing Bottlenecks

Approach 2 = High Occupancy Vehicle Lanes

Approach 3 = Light Rail to Sunrise/Greenback plus Commuter Rail

Approach 4 = Light Rail to Roseville

Approach 5 = Light Rail to Antelope plus Commuter Rail

Several ideas were considered by the advisory committees, but not recommended for study. These include a land-use alternative and a transit-only alternative. These ideas were considered either contrary to regional transportation goals or beyond the scope of the study. It was also agreed not to consider adding general-purpose lanes to I-80 because a high occupancy vehicle (HOV) Systems Planning Study conducted by SACOG in 1990 concluded that adding HOV lanes would result in fewer vehicle trips and less travel delay than would result from adding general-purpose lanes.

Based on the analysis of the five approaches staff recommended an Investment Strategy approach that incorporated elements of the other five approaches. The staff prepared a preliminary recommendation for the Investment Strategy based on the results of the modeling analysis. This

preliminary strategy was presented to the technical advisory committee for review and comment. The strategy was subsequently presented to an Ad Hoc policy advisory committee of PCTPA and SACOG board members in April of 2000. Finally, both the PCTPA and SACOG boards approved, in April 2000, the recommendation that the preliminary Investment Strategy be modeled and analyzed.

Public Participation

To date there have been many opportunities for the public to be involved in the I-80 Corridor study process. Working Papers 4 and 5 both contain a complete description of the public outreach process for the corridor study to date. Technical Appendix 1 of Working Paper 5 presents a chronological history of the public participation opportunities, as well as planning partner, technical advisory committee, and steering committee meetings. There will continue to be opportunities for the public to comment on the Investment Strategy as individual projects are considered for funding.

2. Recommended Strategy for the I-80 Corridor

The recommendations listed below are based on the staff's analysis and interpretation of the modeling results, comments from the Technical Advisory Committee, and comments from the Ad Hoc policy advisory committee.

The strategy has both short- and long-term components. The short-term strategy includes projects which should be completed during the 2000 to 2010 time frame. The long-term strategy includes projects which could be implemented after 2010. Projects in the long-term strategy could be implemented in the short term if they are needed and funding is available.

There are four maps showing the Investment Strategy for the entire corridor. Following the Investment Strategy text below are three short-term strategy maps—one for each county—and one long-term strategy map for the entire corridor. Appendix A describes each of the projects depicted on the maps.

The recommendations below are for those projects which were studied as part of the approach analysis. Other projects considered “common to all approaches” are not listed here, but are an important component of the overall strategy. See the maps which follow this section and Appendix A for a complete list of all projects included in the Investment Strategy.

Short-Term Strategy

- 1) Add high-occupancy vehicle lanes from Longview Drive to Placer County Line.
- 2) Add auxiliary lanes to I-80 from Riverside Ave. to State Route 65.
- 3) Add third lane to connector from westbound I-80 to westbound Capital City freeway. (Business 80)
- 4) Double track the existing light rail system from Royal Oaks to Swanston station and from Marconi/Arcade to Watt/I-80 (including the straightening of Lumberjack curve).
- 5) Add light rail express service during peak periods from Watt/I-80 to downtown.
- 6) Add express buses in corridor (east of I-80 light rail station) and provide transit shuttles where light rail and commuter rail intersect.
- 7) Increase Capitol Corridor service from seven round trips per day to 9 round trips per day by the end of 2000, increase to at least 10 round trips per day by 2005 and to at least 12 round trips per day by 2010; and continue to develop concepts for Truckee-Reno extension (e.g. see the Capitol Corridor Business Plan recommendations).
- 8) Sustain Yolobus Corridor Service between Davis, Woodland, West Sacramento, and

Downtown Sacramento and increase transit service between downtown Sacramento and the airport to provide 1/2 hour service.

- 9) Provide transit shuttles where light rail and commuter rail intersect: Swanston station, Downtown Sacramento, and Roseville. There should also be an examination of providing shuttles for special events, such as the successful shuttles serving Raley's Field.
- 10) Park-and-ride lots should be maintained along the I-80 Corridor. This includes replacing defective bike lockers and keeping the park-and-ride lots in good shape, and expanded as needed.
- 11) Caltrans is in the process of conducting a study of truck traffic on I-80 through the Sierra Nevada. This study will include truck climbing lanes, acceleration/deceleration lanes, and widening possibilities. Once completed, the recommendations of this study should be considered for inclusion in either the short- or long-term strategy.

The following are the recommendations from the Bicycle Focus Group:

General Bicycle

- 1) There needs to be destination signage along the entire existing, planned, and proposed route paralleling I-80 from Placer County to downtown Sacramento.
- 2) Interchange or overcrossing improvements should not degrade bicycle and pedestrian access.
- 3) Parallel routes on both sides of I-80 are important to bicyclists and should be built to connect both sides in a consistent manner.
- 4) Local jurisdictions should continue to look for opportunities to provide additional and better bike/pedestrian crossings of I-80 throughout the corridor.

The local jurisdictions should continue to prioritize and fund bicycle projects according to local bikeway master plans, general plans, etc., including parallel routes both north and south of I-80. However, the following projects would provide at least one continuous route from downtown Sacramento to Auburn.

Placer County

Projects in Placer County are listed in priority order.

- 1) Lanes on Pacific and Taylor Streets in Rocklin and Loomis (from Midas to east end of Loomis with the exception of Sierra College Blvd. to just before downtown Loomis).

- 2) Lanes and route on Roseville Road from County line to Foothills Boulevard (or combination of proposed trail along UP right-of-way and planned lanes).
- 3) Lanes on Auburn Boulevard from County line to Orlando Avenue.
- 4) Connector trail from Foothills Blvd. to Vernon Street and UP tracks (access needed from both sides of Foothills Blvd. to both sides of Vernon) trail to run next to creek.
- 5) Route, lanes, or path from Berry Street in Roseville along Antelope Creek to Springview in Rocklin. This is two routes: Antelope Creek trail from Berry/Harding intersection to Springview. On-street route (proposed), East Roseville Parkway from Harding to Eureka (at Sun Splash), then east on Pacific over I-80 into Rocklin to Sunset.
- 6) Route or lanes on Springview in Rocklin to Sunset. Make signal at 3rd/Springview and Sunset bike/ped friendly, X-walks all four sides. 3rd from Sunset to Midas (lanes). Midas to Pacific (lanes). Lanes along Rocklin Road from Pacific to Sierra College Blvd. Lanes on Sierra College Blvd. from Taylor to just over I-80.
- 7) Lanes on Lincoln Way to Bowman Undercrossing Road.
- 8) Upgrade to Class 2 on Cirby in Roseville from Roseville Road to Sunrise (this is planned to coincide with road-widening project by the City of Roseville).

Sacramento County

Preliminary recommendations for the Sacramento County list of bike projects were presented to the Sacramento City/County Bicycle Advisory Committee for review and comment at their March meeting. The following projects should be given priority status.

- 1) Construct at least one new bike/pedestrian bridge crossing of I-80 for a North Natomas connection to South Natomas and downtown Sacramento; priority locations include a crossing between Truxel Road and I-5, along the West Drainage Canal between I-5 and West El Camino Avenue, and between Truxel Road and Northgate Boulevard.
- 2) Construct a new bike/pedestrian crossing of I-80 just south of Madison Ave. to provide a connection between the east and west sides.
- 3) When the Richards Boulevard extension/connector between the eastern terminus at State Route 160 and the Capital City Freeway is designed, designers should study how the included bike lanes will provide connections to existing and planned bike routes/lanes. At a minimum three options should be examined for the eastern end of the project to provide a connection over the American River to the Cal Expo area and the American River Parkway, including:

- * Adding a new bridge over the American River to connect the project to the American River Parkway.
- * Add on to the existing Capital City Freeway bridge crossing the American River (e.g. through cantilevering) to provide a connection to the American River Parkway.
- * Add on to or use the existing railroad bridge crossing the American River to provide a connection to the American River Parkway.

Final design of the connector project should not preclude provision of a bike crossing of the American River in this area (such as one of the options described above) either in conjunction with the project construction or as a separate future project.

- 4) If State Route 160 is downgraded to a local surface street (such as described in the NEATS study), bike lanes should at a minimum be studied for inclusion in the project. Such bike lanes should be designed, included, and funded as part of the downgrade project.
- 5) The City of Sacramento should continue to use its Transportation Programming Guide priorities to fund specific projects, including projects in the I-80 Corridor.
- 6) The County of Sacramento should continue its process of ranking bike projects in the Bikeway Master Plan. It should also fund the following regionally significant projects in the I-80 Corridor:

- * Sign and/or stripe the proposed route/lanes from Roseville Road to Auburn Boulevard using the existing bike/pedestrian bridge over I-80 between Madison Ave and Greenback Lane.

- * Planned lanes on Old Auburn/Auburn Boulevard from Citrus Heights to Downtown Sacramento (allows ties to the Walerga Road and Hillsdale Boulevard lanes, the Myrtle Ave lanes described above, and anticipated Placer County recommendations).

- * Routes that tie into existing, planned, and programmed facilities such as the Sacramento Northern and Uyeda Parkway projects.

Yolo County

- 1) The local jurisdictions within Yolo County should continue to prioritize and fund bicycle projects according to local bikeway master plans, general plans, etc. Specific projects which are of regional significance and which are not included in other plans (that is, proposed here for the first time) include:

- * Bike lanes for 2.8 miles on County Road 32A from Davis city limits to Yolo

Causeway bike path (north of I-80).

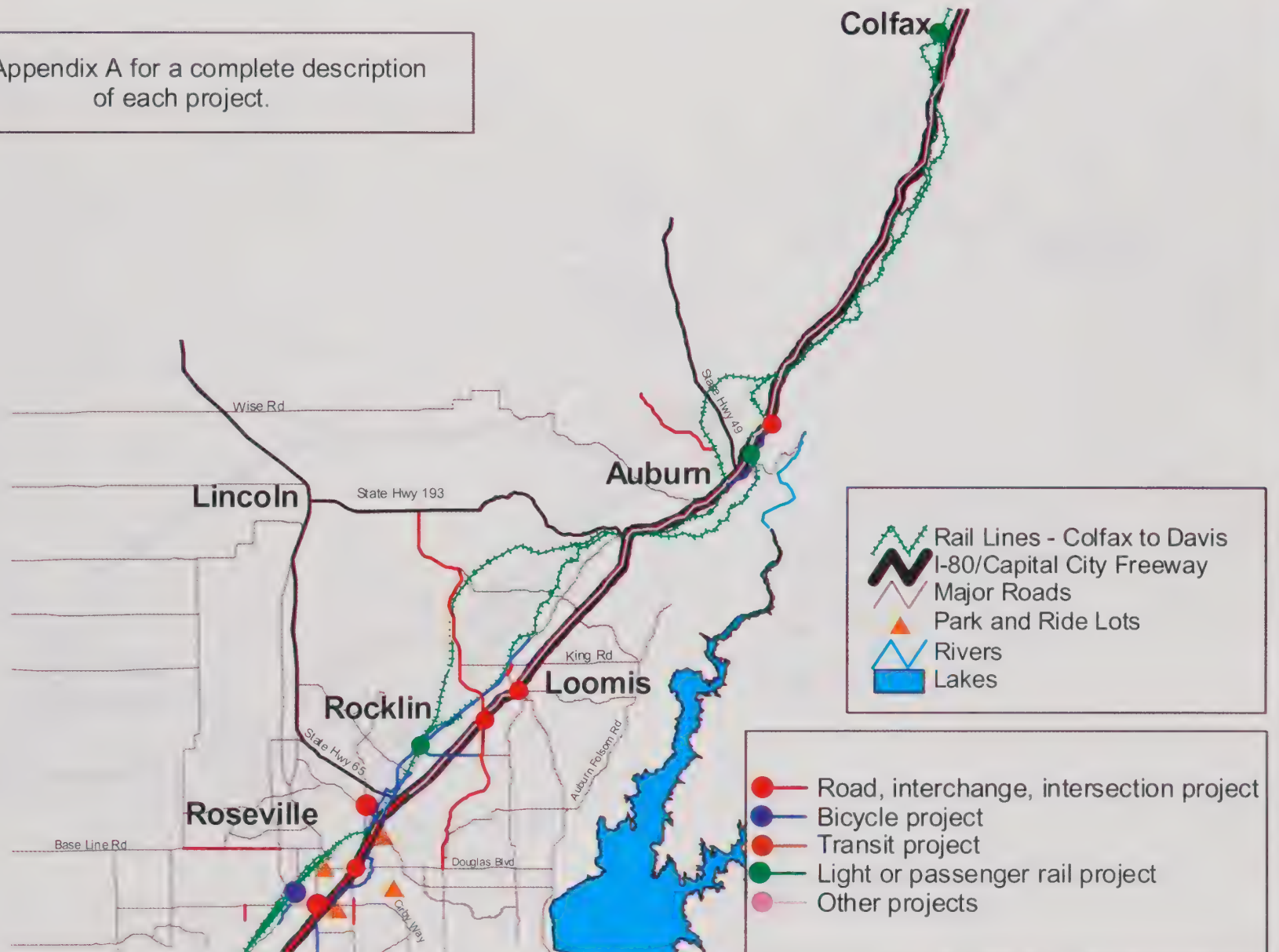
* Bike lanes for 2.7 miles on Chiles Road from Davis city limits to Yolo Causeway bike path (south of I-80).

- 2) Bicycle and Pedestrian improvements to the Tower Bridge between West Sacramento and Sacramento.
- 3) The Drummond bike crossing of I-80 in Davis (just west of the Mace Blvd. interchange).

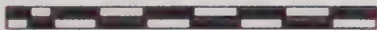
Long-Term Strategy

- 1) Future light rail extensions would be determined after Regional Transit completes its Multi-Corridor Study (MCS) that will look at a number of extensions including: West Sacramento, Roseville, etc.
- 2) Implement Commuter rail from Auburn-Roseville-Sacramento-Davis.
- 3) Those proposed and planned bike lanes/routes and bikeway projects listed in the I-80 Corridor Bicycle Plan Concepts in Working Paper 4 which are not listed as Tier 1 projects and are not high priority local projects.
- 4) Add high-occupancy vehicle lanes on I-80 from Placer County Line to State Route 65.
- 5) Add high-occupancy vehicle lanes on I-80 from I-5 to Longview Drive.

See Appendix A for a complete description of each project.



1 0 1 2 3 4 5 6 7 Miles

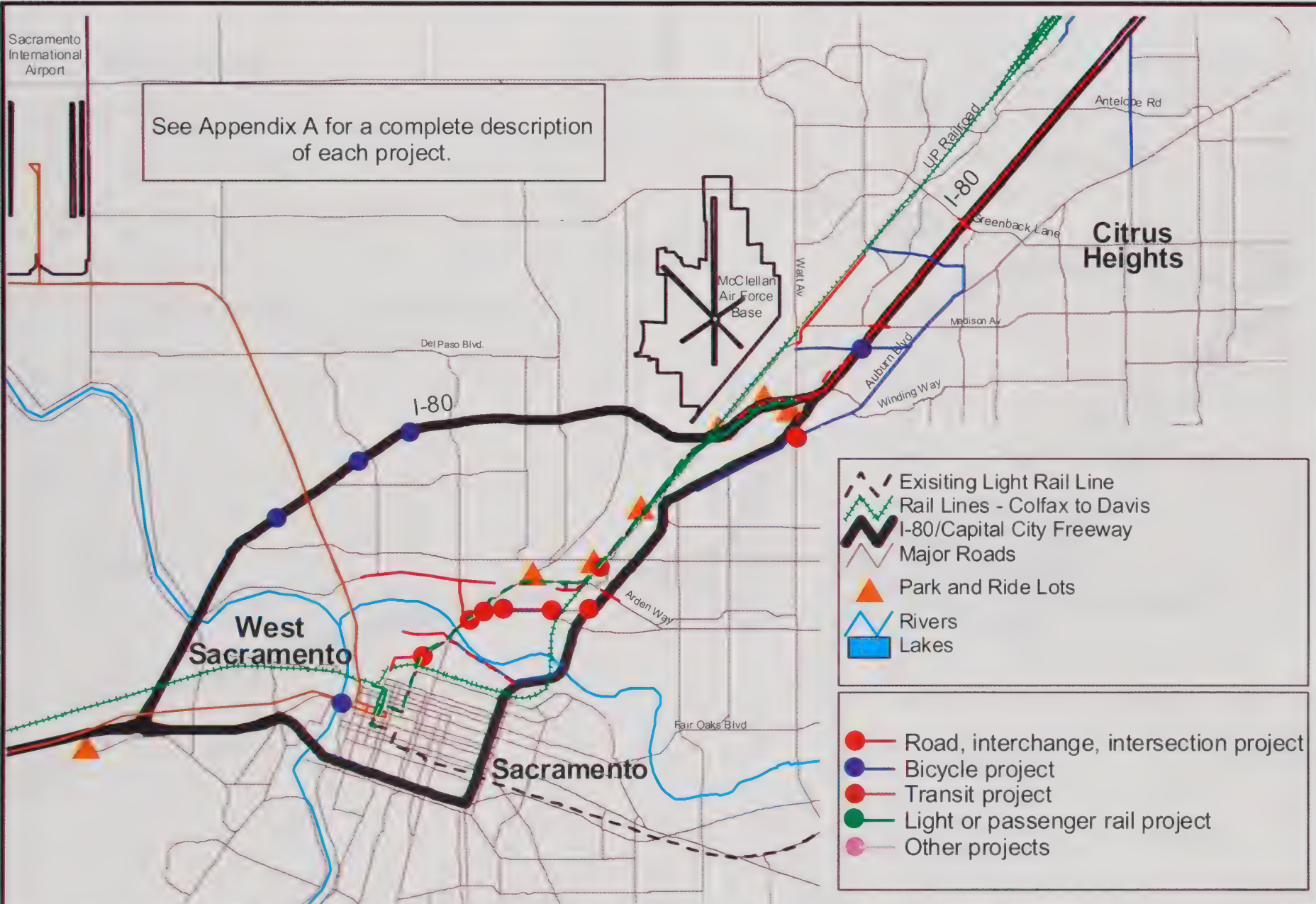


Short Term Strategy For Placer County

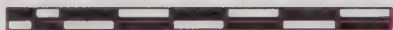


Sacramento
International
Airport

See Appendix A for a complete description
of each project.



1 0 1 2 3 4 5 6 Miles



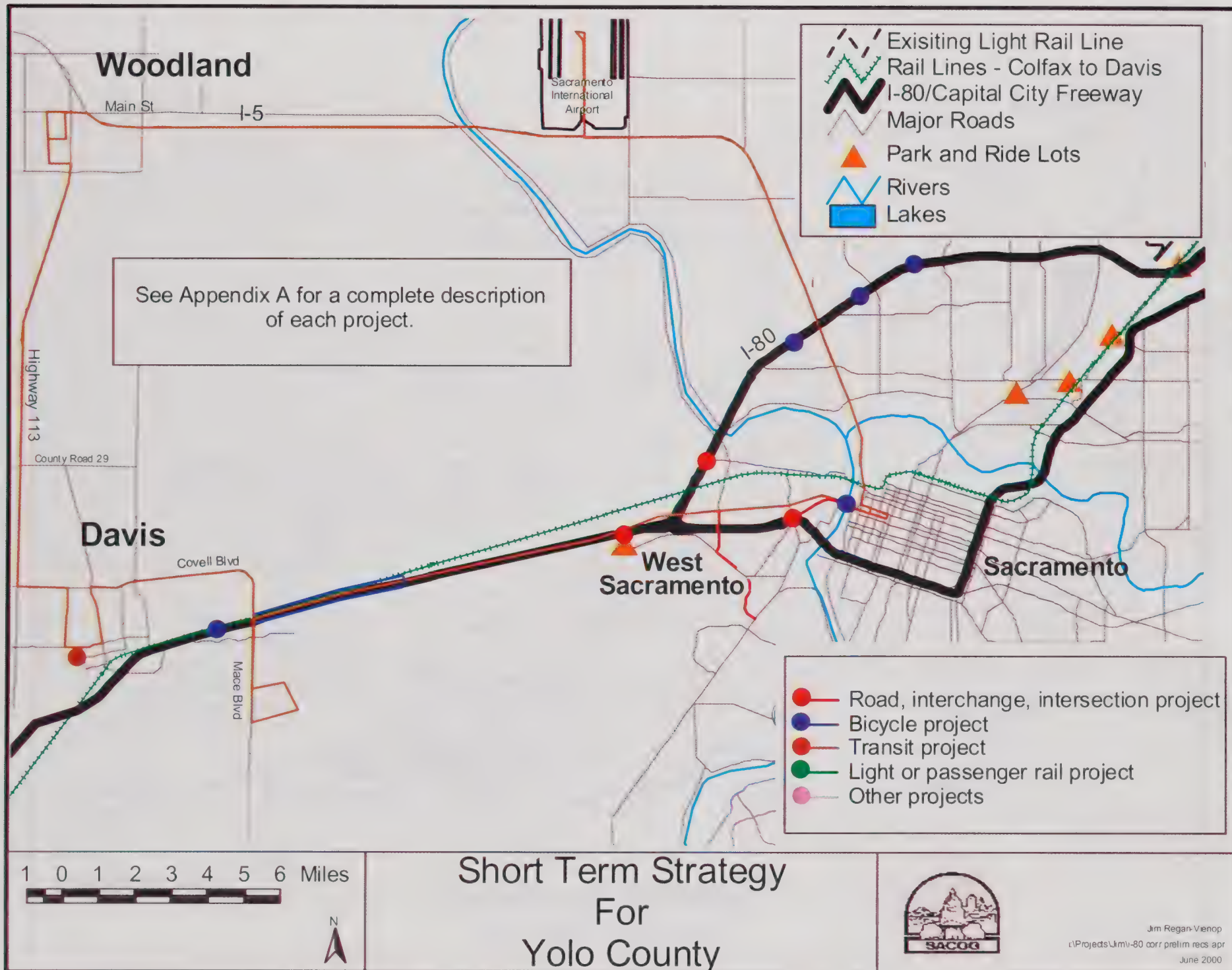
Short Term Strategy For Sacramento County



Jim Regan-Venop

r:\Projects\I-80 corr prelim recs apr

June 2000



High-Occupancy Vehicle lanes from
I-5 to Longview Dr
and
Placer County line to State Route 65

Implement Commuter Rail serving
Auburn-Roseville-Sacramento-Davis

Potential future Light Rail Extension to Roseville
if Regional Transit recommends it after completing
its Multi-Corridor Study

Potential future Light Rail Extension to Antelope if
Regional Transit recommends it after completing its
Multi-Corridor Study

Implement Tier-2 Bicycle strategies

Potential future Light Rail Extension to Citrus
Heights if Regional Transit recommends it after
completing its Multi-Corridor Study

Potential future Light Rail Extension to
West Sacramento if Regional Transit
recommends it after completing its
Multi-Corridor Study

-  Existing Light Rail Line
-  Rail Lines
-  Highways
-  Major Roads
-  Rivers
-  Lakes

2 0 2 4 Miles

Long Term Investment Strategy For I-80 Corridor



San Joaquin Hills
L'Orleans, San Joaquin Hills
June 2000

2010
Study

3. Costs

The capital cost of the Investment Strategy is estimated at around \$598 million (constant 1999 dollars) over 10 years. This breaks down into approximately \$202 million for the “new” projects proposed here and about \$396 million for the bike, roadway, and transit projects assumed as part of the base case (and common to all of the approaches). Operational and maintenance expenses (when lumped together also called lifecycle expenses) would cost about \$11.4 million annually. The other five approaches ranged from \$205 million to \$521 million in capital costs (not including the \$396 million common projects) and \$7.5 million to \$32 million in annual operational/lifecycle/ maintenance costs. This puts the Investment Strategy as the lowest capital cost approach and on the lower end of the range for annual costs.

Note that the \$396 million figure for the “common to all approach” projects is higher than reported in Working Paper 5 (\$371 million). This difference reflects the addition of the costs for the bicycle project recommendations (approximately \$25 million) to the common cost. It was agreed early in the study process that the bike plan, developed separately by a bicycle focus group to give adequate consideration to bicycle needs, would be incorporated into the Investment Strategy regardless of which approach was chosen. Impacts from the bicycle projects were thus assumed as part of the base case and not studied as separate projects. No cost figures were reported for the bicycle projects in the Investment Strategy contained in Working Paper 5 since the final bike strategy was not agreed upon until shortly before the report’s release. Subsequent to the release of Working Paper 5 the final bike strategy cost estimates were developed.

Rail/Light Rail

Capital costs for the light rail line projects were developed in coordination with Sacramento Regional Transit District staff. Cost estimates include capital and “soft” costs (such as vehicles, administration, 25% contingency, stations, traction power, civil engineering, rights-of-way, and track). Some savings are possible if commuter and light rail stations share facilities in given locations. Annual operating and maintenance costs were also developed in coordination with Sacramento Regional Transit District staff.

Straightening, double tracking, and adding express light rail service, as proposed in the short-term strategy, would cost about \$31.9 million with the express service adding about \$1.9 million in annual operating/maintenance costs. Long-term strategy capital and operations/maintenance/lifecycle costs would depend upon recommendations made in the Sacramento Regional Transit District Multi-Corridor Study. Capital cost estimates for the various light rail extensions studied in Working Paper 5, Analysis of Approaches, ranged from \$50 million to \$350 million.

HOV and Auxiliary Lanes

Costs for the various high occupancy vehicle (HOV) lane segment/projects were developed in coordination with Caltrans staff. It is assumed in this study that the HOV lanes will be contiguous lanes, that is, differentiated by diamonds and signage only, with no special striping,

physical barriers, or buffer zones. Although the added freeway HOV lanes would be constructed in the existing freeway median on I-80, outside widening and lane re-striping may be necessary in some places in order to fit in the new lanes, an adequate median, and enforcement areas. Where I-80 is an above-ground structure, the structure may need to be widened to accommodate the HOV lanes. Preliminary study has shown that all new work can be constructed within the existing Caltrans right of way.

The capital cost of constructing the HOV lanes between Longview Drive and the Placer County line (the short term strategy) would be about \$28.3 million. Capital costs for constructing the auxiliary lanes between Riverside and State Route 65 in Placer County would be approximately \$20 million. The capital cost for the long-term strategy of adding HOV lanes to I-80 from the Placer County line to State Route 65 would be about \$16 million.

Operating and “lifecycle” (includes preventative maintenance, all types of treatments such as rehabilitation and resurfacing, crack sealing, etc.) costs were also developed in coordination with Caltrans staff. The HOV and auxiliary lane operating costs (including costs for monitoring traffic, doing traffic counts, etc.) were calculated using a figure of just over \$3,625 per lane mile. Annual lifecycle costs were calculated using a “conservative” (that is, high end) figure of \$25,000 per lane mile. The cost of patrolling and enforcing the HOV lanes was not included in any of these estimates.

The short-term strategy annual operating/lifecycle/maintenance costs for the HOV lanes from Longview to the Placer County line would run about \$500,000. For the auxiliary lanes between Riverside and State Route 65 the cost would be around \$320,000. The long-term strategy annual operating/lifecycle/maintenance costs for the HOV lanes from Longview to the Placer County line would run about \$250,000.

Other Transit

Costs for additional bus service (that is, service beyond what is projected in the base case) were derived through coordination with Sacramento Regional Transit District, Yolo County Transportation District, and PCTPA staff. These costs were not reduced by estimated passenger fare recovery. Annual operating costs for the additional bus and shuttle services proposed in the Investment Strategy would run about \$4.5 million. The other five approaches ranged from \$5.4 million to \$27.1 million for annual operating costs.

Passenger Rail

Passenger rail service (Capitol Corridor) costs were developed in consultation with Capitol Corridor Joint Powers Authority staff. All costs are incremental (that is, above currently assumed levels of service) and are for the Davis to Auburn/Colfax/Reno portion of the Corridor only. Implementation in three stages (2000, 2005, and 2010 respectively) would have capital costs of approximately \$15 million, \$17.5 million, and \$80 million (including an extension to Reno). Annual operating/maintenance/lifecycle costs would be approximately \$1.1 million and \$1.8

million (for 2005 and 2010 respectively). The operating cost for an extension to Reno after 2010 is currently estimated to be about \$1.9 million annually.

Bicycle Projects

There are many bicycle projects included as part of the Investment Strategy. The cost to implement all of the listed projects would be approximately \$25 million.

Other projects

Most of the cost of the “common to all approaches” comes from roadway or roadway related projects assumed in the base case. Out of the approximately \$396 million worth of projects “common to all approaches,” about \$47 million would go towards transit-oriented projects, approximately \$14 million would go towards implementing smart corridor technology, roughly \$25 million would be for bicycle projects, and \$310 million would go for roadway related projects.

The short- and long-term strategy maps depict all of the projects included as part of the Investment Strategy, including the “common to all approach” projects. Appendix A describes all of the Investment Strategy projects.

4. Modeling Results

Approaches Recap

Working Paper 4 defined five study approaches which were modeled and analyzed to determine their performance in achieving the goals and objectives of this study. The results of that first round of modeling were reported in Working Paper 5. Full descriptions of the five approaches can be found in both Working Papers 4 and 5. As a reminder, the following list recaps the emphasis of the five approaches.

Approach 1 = Fixing Bottlenecks

Approach 2 = HOV Lanes

Approach 3 = Light Rail to Sunrise/Greenback plus Commuter Rail

Approach 4 = Light Rail to Roseville

Approach 5 = Light Rail to Antelope plus Commuter Rail

Investment Strategy Performance

The following discussion highlights the modeling done for the Investment Strategy and compares it to the other approaches. As was reported in Working Paper 5, of the 40-plus performance measures modeled, most showed no significant differences among the approaches. Ten of the forty measures showing the most significant variation or of great interest were highlighted in Tables S-1 and 28 of Working Paper 5. As stated in Working Paper 5:

No one approach clearly out performed all of the other approaches in most of the performance measures evaluated. Picking and choosing desired aspects of the various approaches to form a preferred Investment Strategy is likely to have different results in the modeling process than were achieved in the first round of modeling. This is due to the complex interactions among the projects and their impacts on the transportation system.

Analysis of the modeling results for the Investment Strategy show that the above paragraph is still true. Like the other five approaches, the Investment Strategy did not clearly out perform all of the other approaches in most of the performance measures evaluated. Indeed, in many cases the Investment Strategy results ended up being near the middle of the range of results. In a few places the Investment Strategy had slightly higher or lower results than the other five approaches. However, where the Investment Strategy results were outside the range of results for the other approaches it was not significantly higher or lower.

Table 2 below is the nearly the same as Tables S-1 and 28 of Working Paper 5. It shows those performance measures which, as discussed in Working Paper 5, had more significant differences among the approaches. As this table shows, the Investment Strategy comes in squarely in the middle of the other five approaches for eight of the ten performance measures.

Table 2. Summary of Significant Differences in the Performance Measures¹

<i>Performance Measure</i>	<i>Base case</i>	<i>Approach 1</i>	<i>Approach 2</i>	<i>Approach 3</i>	<i>Approach 4</i>	<i>Approach 5</i>	<i>Inv. Strat</i>
A-4. Person Miles Traveled (Typical Weekday, in thousands) - number and difference from base	70,012	70,370 358	70,392 380	69,987 -25	69,953 -59	69,935 -76	70,167 155
A-5. Vehicle Miles Traveled (Typical Weekday, in thousands) number and difference from base	55,589	55,850 261	55,832 243	55,573 -16	55,540 -49	55,526 -62	55,706 118
A-6. Linked Transit Passenger Trips (typical weekday - number and difference)	108,356	112,554 4,198	111,990 3,634	111,453 3,097	112,860 4,504	111,043 2,687	111,550 3,194
A-7. Modal Share (percentage, work trips)							
Drive Alone	76.4	76.2	76.2	76.4	76.2	76.3	76.3
Shared Ride	15.4	15.5	15.5	15.4	15.4	15.4	15.5
Transit	4.2	4.3	4.3	4.1	4.3	4.2	4.3
B-3. Person Miles of Travel at Volume to Capacity Ratio greater than 0.90 ²	12,975	12,522 -3%	12,756 -2%	13,000 0%	12,796 -1%	12,966 -0%	12,796 -1%
E-3. Vehicle Emissions (Tons/day)							
Reactive Organic Gasses (ROG)	19.01	19.07	19.10	19.00	18.96	19.00	19.01
Nitrogen Oxides (NOx)	49.30	49.92	49.88	49.45	49.25	49.41	49.57
D-1 to D-3. Financial Measures (in millions, constant 1999 dollars)	\$396.3 ³						
Capital Cost		\$237.9	\$204.9	\$405.7	\$520.8	\$376.5	\$201.9
Annual Maint/Ops/Lifecycle costs		\$7.8	\$7.5	\$17.7	\$31.9	\$17.7	\$11.4
Annualized Lifecycle costs ⁴		\$13.8	\$12.2	\$34.0	\$52.8	\$32.8	\$18.5
F-5. Transit Lifecycle Cost per new rider		\$8.50	\$6.81	\$32.91	\$40.06	\$36.07	\$7.75

¹ Results are regional and not just for the corridor unless otherwise noted. There were more than 40 Performance Measures advanced during the development of this study. Those Performance Measures not included in this table resulted in little or no significant differences among the approaches during the modeling process, mirror other performance measures (e.g. measure F-1 results mirror the cost factor pattern), or turned out to be impossible to calculate. Numbers in **bold** indicate the “best” performing approach (e.g. lowest cost). Several entries have no bold text because there is disagreement on whether person and vehicle miles traveled reductions or increases are better or two or more approaches performed equally.

² Peak Period, in Thousands, Region - number and difference from base.

³ This cost is common to all approaches and should be added to the Capital Cost to get the full cost of the approach.

⁴ Annualized Capital Costs plus annual Maintenance/Operations/Lifecycle costs.

For the other two performance measures, F-5 and D-1, the Investment Strategy ranked very close to the most cost-efficient transit approach and ranked as the lowest capital cost approach.

Transit Performance Measures

In general, Approaches 1 and 2 emphasized roadway projects. Approaches 3, 4, 5 emphasized light rail transit proposals. Both Approaches 1 and 2 proposed substantially increased bus service in Yolo and Sacramento Counties (essentially doubling service in Yolo County and significant increases in Sacramento County). In addition, Approach 1 also proposed express light rail service on the existing line. Approach 2 included continuation of service to Sacramento International Airport.

As a result of the analysis contained in Working Paper 5, the light rail options proposed in Approaches 3, 4, and 5 were included in a longer term strategy for the corridor. The Investment Strategy focuses on express light rail and increased bus service which could be implemented within the ten-year timeframe of the study.

The Investment Strategy proposes a continuation of current bus service levels, plus any increases assumed as part of the base case, in Sacramento and Yolo Counties. It also includes increases in bus service from the Placer County jurisdictions which were not included in any of the other Approaches. In addition, the Investment Strategy includes express light rail service and an increase in bus service to the Sacramento International Airport.

The Investment Strategy does not generate as many new linked transit passenger trips as were generated by Approaches 1 and 2. However, in the related Performance Measure F-5, the Investment Strategy shows up as a more cost effective option than Approach 1. Approach 2 shows up as the most cost effective approach for increasing transit ridership; however, Approach 2 proposed only bus service increases. The Investment Strategy proposes service improvements and increases for both bus and light rail transit.

Finally, the Investment Strategy generates some travel time savings for the various travel modes in intra-corridor work trips. Modeling results show that for drive alone, shared ride, and walk/transit trips the Investment Strategy falls squarely in the middle of the range of results generated by the other approaches. However, for drive/transit trips the Investment Strategy generates the most time savings (seconds per mile traveled) of any of the approaches; equaled only by Approach 3.

Roadway and Vehicle Performance Measures

The Investment Strategy generates less than half the increase in person miles traveled (see Performance Measure A-4) and about half the increase in vehicle miles traveled (see Performance Measure A-5) of either Approach 1 or 2. However, it generates more person miles traveled and vehicle miles traveled than Approaches 3, 4, and 5. The Investment Strategy also slightly decreases the person miles traveled at a volume-to-capacity ratio of greater than 0.90 (see Performance Measure B-3) although not quite as much as either Approach 1 or 2.

Additionally, the Investment Strategy generates less vehicle emissions (see Performance Measure E-3) than either Approach 1 or 2, but generates more than Approaches 3, 4, and 5. For the Reactive Organic Gasses, the Investment Strategy produces no increases from the base case. Nitrogen Oxide emissions of the Investment Strategy would increase slightly over what could be expected in the base case.

5. Benefits/Impacts

The Investment Strategy meets the purpose and need for the transportation improvements, which is to address current and future congestion, mobility, and access, through a multi-modal strategy. It does this by including improvements to transit, highways, local roads, and bicycle facilities.

Expected benefits include quicker trips on the freeway for users of HOV lanes, decreased transit travel times and increased transit ridership, eased traffic congestion at intersections and overcrossings, improved access to employment centers, and safer and more continuous bikeways.

The Investment Strategy emphasizes efficient use of existing facilities without requiring the acquisition of new rights-of-way or disrupting existing development. For example, the High-Occupancy Vehicle lanes would be added in the center of the I-80 median thus requiring no new right of way.

In addition, the capital investment requirements of the Investment Strategy are relatively low cost when compared to the other approaches. Over the long term, the Investment Strategy would cost a bit more than the other low cost approaches due to higher operation/maintenance/lifecycle costs.

The Investment Strategy is also a cost effective approach to providing new transit riders, for both light rail and bus service, when compared to the other approaches. It also provides travel time savings for the many users of the transit system.

The Investment Strategy produces less vehicle emissions than the two approaches which emphasized more extensive roadway projects. Similarly, the Investment Strategy would result in less person and vehicle miles traveled than either of the two roadway emphasis approaches. The slight increase in NOx emissions (0.27 tons/day over the base case in 2010) associated with the recommended Investment Strategy, however, is a concern given the region's current status as a non-attainment area for ozone. Accordingly, SACOG will closely monitor projected emissions and seek any necessary project schedule adjustments to ensure that air quality goals are met.

Congestion in the corridor will increase less rapidly than would occur under the base case and many users could experience travel time savings as a result. Users of the HOV lanes (e.g. carpools and express and commuter buses) during the AM peak hour travel time could save approximately five minutes between Riverside Ave. and the I-80 and Capital City Freeway junction. In addition, the Investment Strategy shows a slight decrease in the percentage of drive-alone work trips and slight increases in the percentage shares of both transit and shared-ride work trips.

The Investment Strategy balances the needs of the region by providing a cost-effective, multi-modal approach to address the problems within the I-80 corridor.

6. Financial Strategy

An important component of any Corridor Study is the analysis of available funding for the projects under consideration.

In the case of the I-80 Corridor (with geographical limits as defined in this report), there are already high-occupancy vehicle and rail projects with estimated costs included in the adopted 1999 *Metropolitan Transportation Plan* (MTP). Technical Appendix 6 of Working Paper 5 lists all of the projects and their costs proposed in the approaches, as well as the base case projects. The base case projects taken from the 1999 MTP are listed at the beginning of the table in Technical Appendix 6 and have project numbers in the first column. Costs for most of these projects were taken directly from the MTP. A few costs were updated to reflect a change in project scope as projects were modified during the development of the approaches.

The 1999 MTP includes estimates of both existing and “reasonably available” new revenue sources that are proposed to pay for projects. The operating costs of these improvements and the funds to pay for them are also included in the MTP—in a separate section from the capital projects. New revenue sources include a proposed fuel-tax increment (1 cent-per-gallon-per-year increase that would be returned to counties for transportation purposes) and the re-authorization of Sacramento County’s Measure A ½-percent sales tax for transportation in 2009. The plan demonstrates that, with the existing and new revenue sources in place, there are sufficient revenues to pay for the base-case improvements as well as for the cost of operating these improvements.

The one potential exception to this would be where a project’s cost is substantially greater than listed in the MTP. For example, during the development of the approaches, the project scope for the HOV lanes from Richards Boulevard in Davis to Harbor Boulevard in West Sacramento changed. The cost, based on one set of assumptions about the project, was estimated in the MTP at \$37 million, but could be as high as \$105 million under a different set of assumptions. The difference comes in how much elevated structure would need to be built to complete the project.

As shown in Table 23 in Chapter 10 of Working Paper 5, the cost for the base-case projects is about \$396 million (constant 1999 dollars). Most of this cost is already accounted for in the 1999 MTP, except for where project costs have been updated for study purposes or new bike projects have been proposed and added. In addition to that cost, will be the additional \$202 million for the specific Investment Strategy projects. Clearly, new funding, re-prioritizing and reprogramming, or a combination of these will be needed to pay for the “conceptual” projects proposed in the Investment Strategy.

There are four options to show that funding would be available to pay for it.

1. Fit all of these projects into the MTP by dropping other projects from the plan.
2. Phase the I-80 Corridor improvements so that some of them are deferred beyond the year

2022, the last year of the MTP.

3. Create a “hybrid” approach that includes some projects from various approaches, all of which would be affordable under the current amount planned for the I-80 Corridor.
4. Use an “innovative funding” method to pay for some projects, such as the use of state infrastructure bank, bonding against future revenues, and advanced construction. Federal rules prohibiting the use of federal funds for leveraging other funds have recently been relaxed.

Alternatively, if funding becomes available through a source that is not yet accounted for in the MTP (such as developer funding or a federal grant), the Investment Strategy is flexible enough to adjust to this additional funding by adjusting the schedule of improvements.

Through leveraging of funds, the projects in the chosen Investment Strategy could be constructed earlier than if a “pay-as-you-go” strategy is chosen. There are many different methods for leveraging public funds and these would have to be designed to fit the particular facility and revenue-stream characteristics.

Appendix A. Investment Strategy Projects

Projects Evaluated as Part of the Investment Strategy

Jurisdiction	Project Description	Capital Costs ¹	Year
<i>All Jurisdictions</i>		<i>In millions</i>	
Caltrans	Construct HOV lanes in both directions from the vicinity of the Longview Drive interchange to the Placer County line.	\$28.3	2005
Caltrans	Add additional flyover lane (westbound) @ I-80 and Capital City Freeway (Watt Intersection)	\$6.8	2005
Caltrans	Add auxiliary lanes on each side of I-80 from Antelope Road in Sacramento County to State Route 65 in Placer County	\$20.0	2010
Placer County	By 2005, ten round trips per day on the existing Capital Corridor route (one round trip to Colfax). Stop at existing Amtrak Stops.	\$15.0	2005
Placer County	By 2010, twelve round trips per day (two to Colfax). Stop at existing Amtrak stops.	\$17.5	2010
Placer County	After 2010, extend service to Tahoe and Reno, two round trips per day and four on Friday and Saturday. Stops at existing Amtrak stops.	\$80.0	2015
Placer County	Improvements to commuter and other transit service in Placer County as described in Placer County Transit's soon to be approved Short Range Transit Plan; including an I-80 Auburn/Roseville Express and the Colfax to downtown Sacramento Commuter service.	\$1.3	2005
Regional Transit	Add double track to light rail line from Royal Oaks to Swanston and from Marconi/Arcade to Watt/I-80, including straightening of Lumberjack curve.	\$6.9	2010
Regional Transit	Add express light rail service every half hour during peak hours with stops at Watt/I-80, Roseville Road, Arden/Del Paso, Alkali Flat, and all downtown stops to 13th and R St. This is in addition to local service every 15 minutes.	\$25.0	2010
Sacramento County	Construct at least one new bike/pedestrian bridge crossing of I-80 for a North Natomas connection to South Natomas and downtown Sacramento; priority locations include a crossing between Truxel Road and I-5, along the West Drainage Canal between I-5 and West El Camino Avenue, and between Truxel Road and Northgate Blvd.	*	2010
Sacramento County	Construct a bike/pedestrian crossing of I-80 just south of Madison Ave. to provide a connection between the east and west sides.	*	2010
TMA's	Shuttles from rail stations to businesses.	**	2010
Various	Sustain and expand bus service to airport.	**	2005
Various	Develop and maintain park-and-ride lots	\$1.1	2010
Total		\$201.9	

¹ Constant 1999 dollars.

* The capital costs for these projects were included in the costs of the common to all approaches projects. Capital costs are estimated to be about \$2.5 million for one bike crossing from North Natomas to South Natomas and approximately \$1.5 million for the bike project south of Madison Ave.

** The shuttles and airport transit service would have little or no capital costs associated with them, but do have maintenance and operations costs.

Other Projects Included in the Investment Strategy

Jurisdiction	Location	Project Description	Year
<i>Placer County Jurisdictions</i>			
Auburn	Lincoln Way	Add bike lanes on Lincoln Way from Auburn to Bowman Undercrossing Road.	2010
Loomis	Horseshoe Bar Rd. at I-80	Widen overcrossing from 2 to 4 lanes and improve ramps.	2010
Loomis	Taylor Rd.	Horseshoe Bar Road to King Road, widen from 2 to 4 lanes.	2010
Placer County	Auburn Ravine Rd. at I-80	Widen the Auburn Ravine Road overcrossing of I-80 from 2 to 4 lanes.	2010
Placer County	Baseline Rd.	Fiddymont to Cook-Riolo -- Widen to 4 lanes.	2005
Placer County	I-80 Corridor	Ramp metering at all interchanges from Foresthill Road to Sacramento County line.	2005
Placer County	Mt. Vernon Rd.	Widen to 4 lanes and realign from Auburn city limit to Atwood Road.	2005
Placer County	North Antelope Rd.	Widen to 4 lanes from Sacramento County line to PFE Road.	2005
Placer County	Various	Construct improvements to platforms, stations, and related track improvements at the Rocklin and Auburn stations	2005
Placer County	Various	Western Placer County park and ride program - Construct park and ride lots.	2005
Rocklin	Rocklin rail station	Construct a permanent platform for the Rocklin rail station	2005
Rocklin	Sierra College Blvd.	Widen to 6 lanes from Taylor Road to south Rocklin city limit.	2010
Rocklin	Sierra College Blvd.	Widen from Taylor Road to State Route 193 from 2 to 4 lanes with traffic signal at State Route 193.	2010
Rocklin	Sierra College Blvd. at I-80	Reconstruct interchange at Sierra College Boulevard.	2010
Rocklin	Springview Drive	Add bike route or lanes on Springview in Rocklin to Sunset. Make signal at 3 rd St/Springview and Sunset bike/ped friendly; including crosswalks to all 4 corners. Add bike lanes on 3rd St. from Sunset to Midas Av. and Midas Av. to Pacific St. Add bike lanes along Rocklin Road from Pacific St. to Sierra College Blvd.	2010
Roseville	Antelope Creek	Add bike route, lanes, or path from Berry Street in Roseville along Antelope Creek to Springview in Rocklin This is 2 routes: Antelope Creek trail from Berry/Harding intersection to Springview. On street route (proposed), Roseville Parkway from Harding to Antelope Creek Trail and East Roseville Parkway.	2010

Other Projects Included in the Investment Strategy

Jurisdiction	Location	Project Description	Year
Roseville	Auburn Blvd.	Bike lanes on Auburn Boulevard from County line to Orlando Avenue.	2010
Roseville	Baseline Rd.	Widen 2 to 4 lanes from city limit to west of Foothill Blvd.	2005
Roseville	Cirby Way	Upgrade to Class 2 bikeway on Cirby in Roseville from Roseville Road to Sunrise (this is planned to coincide with road-widening project by the City of Roseville).	2010
Roseville	Douglas Blvd. at I-80	At Douglas Blvd. interchange, modify interchange and grade separation of Sunrise/Douglas.	2005
Roseville	Foothills Blvd. at Vernon St.	Connector trail from Foothills Blvd. to Vernon Street and UP tracks (access needed from both sides of Foothills Blvd. to both sides of Vernon); trail to run next to creek.	2010
Roseville	Harding Blvd. @ Roseville Pkwy.	Construct grade-separated urban interchange with Roseville Pkwy. over Harding Blvd.	2010
Roseville	Riverside Ave. @ Cirby Way	Grade separation of NB Riverside Ave. to WB Cirby Way.	2005
Roseville	Roseville Road	Bike lanes and route on Roseville Road from County line to Foothills Boulevard (or combination of proposed trail along UP right-of-way and planned lanes).	2010
Roseville	Sierra College Blvd.	Widen road, South Rocklin city limit to Olympus Drive.	2005
Roseville	Sunrise Ave.	Widen from 4 to 6 lanes, from Sacramento County to Madden Lane.	2005
Various	Pacific and Taylor Streets	Bike lanes on Pacific and Taylor Streets in Rocklin and Loomis (from Midas to East end of Loomis with the exception of Sierra College Blvd to just before downtown Loomis).	2010
Regional Projects			
Various	I-80	Implement smart-corridor technology where feasible.	2010
Various	I-80 Corridor	Destination signage along the entire existing, planned, and proposed bike route paralleling I-80 from Placer County to downtown Sacramento.	2010
Various	I-80 Corridor	Interchange or overcrossing improvements should not degrade bicycle and pedestrian access.	2010
Various	I-80 Corridor	Parallel routes on both sides of I-80 are important to bicyclists and should be built to connect both sides in a consistent manner.	2010
Various	I-80 Corridor	Local jurisdictions should continue to look for opportunities to provide additional and better bike/pedestrian crossings of I-80 throughout the corridor.	2010
Various	Tower Bridge	Bicycle and pedestrian improvements to the Tower Bridge between West Sacramento and Sacramento.	2010

Other Projects Included in the Investment Strategy

Jurisdiction	Location	Project Description	Year
Sacramento County Jurisdictions			
Citrus Heights	Auburn Blvd.	Widen from Greenback Lane to Manzanita Ave. from 4 to 6 lanes.	2010
City of Sacramento	12th & North B Street	Create operational improvements to enhance capacity and safety. Provide sidewalks and bike facilities as appropriate.	2005
City of Sacramento	Garden Highway	Widen from Natomas Park Dr. to Northgate Blvd. from 2 to 4 lanes.	2010
City of Sacramento	Gateway Blvd.	Construct a 2-lane collector from the intersection of North B/12th St., southwest to an intersection with the proposed 7th St. extension. Provide sidewalks and bike lanes in both directions.	2005
City of Sacramento	Evergreen Street Extension	Construct new 2 lane road from Arden Way to Royal Oaks Drive.	2015
City of Sacramento	Exposition Blvd.	Phase 2: Build new split-diamond interchange at Route 160.	2015
City of Sacramento	Northgate Blvd.	Widen from Route 160 to Garden Hwy. to 4 lanes and elevate.	2015
City of Sacramento	Richards Blvd.	Phase 2 of Richards Blvd. project from I-5 to North 12th St.: Widen from North 7th St. to North 12th St. from 2 to 4 lanes and add bike lanes.	2005
City of Sacramento	Route 160/Commerce Cir	Construct an intersection at SR160 and Commerce Circle for right-in, right-out only.	2005
City of Sacramento	Route 160/Del Paso Blvd.	Add a WB off-ramp from SR160 to Del Paso Blvd.	2005
City of Sacramento	Route 160/Exposition Blvd. & Del Paso Blvd.	Construct at grade signalized intersections at SR160 and Del Paso Blvd. and Exposition Blvd. Add one lane in each direction to SR160 between intersections.	2005
City of Sacramento	Route 160/Northgate Blvd.	Construct a buttonhook ramp for the EB entrance ramp and the WB entrance ramp and exit ramps.	2010
City of Sacramento	Route 160/ Richards Blvd.	Construct an at-grade signalized intersection. Provide sidewalks and bike lanes in both directions on Richards Blvd.	2005
City of Sacramento	Route 51 at Arden Way	Replace under crossing structures on SR51 in Arden Way. Widen Arden way to 6 lanes, including sidewalks and bike lanes in both directions. Relocate/realign ramp terminals.	2005
City of Sacramento	Route 51 at 51/160 interchange	Braided ramps and auxiliary lane at Routes 51/160 interchange including Tribute Rd. on-ramp closure.	2015
Regional Transit	Downtown-Natomas Corridor	Interim extension of the North line from 7th/8th Streets and K St. to the Amtrak Depot at 5th and H Streets including one light rail vehicle.	2005

Other Projects Included in the Investment Strategy

Jurisdiction	Location	Project Description	Year
Regional Transit	I-80 Corridor	Construct pedestrian crossing and bus-to-LRT transfer facility at Swanston station transit park-and-ride.	2005
Regional Transit	I-80 Corridor	Increase bus service in Sacramento County as assumed in the base case.	2010
Regional Transit	Sacramento County	Antelope park and ride lot.	2005
Sacramento County	Auburn Blvd. at Watt Ave.	Widen Auburn/Watt intersection adding a second left turn lane in NB and SB approaches and a NB right turn lane on Watt Ave.	2005
Sacramento County	Greenback Lane at I-80	Modify the interchange on I-80 at Greenback Lane and Elkhorn Boulevard.	2005
Sacramento County	I-80 Corridor	When the Richards Boulevard extension/connector between the eastern terminus at State Route 160 and the Capital City Freeway is designed, designers should study how the included bike lanes will provide connections to existing and planned bike routes/lanes.	2010
Sacramento County	I-80 Corridor	If State Route 160 is downgraded to a local surface street (such as described in the NEATS study), bike lanes should at a minimum be studied for inclusion in the project. Such bike lanes should be designed, included, and funded as part of the downgrade project.	2010
Sacramento County	I-80 Corridor	Sign and/or stripe the proposed bike route/lanes from Roseville Road to Auburn Boulevard using the existing bike/pedestrian bridge over I-80 between Madison Ave and Greenback Lane.	2010
Sacramento County	I-80 Corridor	Planned bike lanes on Old Auburn/Auburn Boulevard from Citrus Heights to Downtown Sacramento (allows ties to the Walerga Road and Hillsdale Boulevard bike lanes, the Myrtle Ave bike lanes described above, and anticipated Placer County bikeways master plan recommendations).	2010
Sacramento County	I-80 Corridor	Bike routes that tie into existing, planned, and programmed facilities such as the Sacramento Northern and Uyeda Parkway bike projects.	2010
Sacramento County	Madison Ave. at I-80	Modify the interchange on I-80 at Madison Avenue.	2005
Sacramento County	Roseville Rd.	Widen from Watt Ave. to Oak Hollow from 2 to 4 lanes.	2010
Sacramento County	Route 51, I-80, Route 160	Construct metering/surveillance system on Route 51 from American River to the Route 51/I-80 separation, on I-80 from the Route 51/I-80 separation to the Placer County line, and on Route 160 at 0.5 kilometer west of Tribute Rd.	2005
Yolo County Jurisdictions			
City of Davis	Drummond crossing	Construct the Drummond bike crossing of I-80 in Davis (just west of the Mace Blvd. interchange).	2010

Other Projects Included in the Investment Strategy

Jurisdiction	Location	Project Description	Year
City of Davis	Unitrans	Terminal facilities.	2005
City of Davis	Unitrans	Purchase 11 new buses.	2005
City of Davis	Unitrans	Purchase 21 new buses.	2010
West Sacramento	Enterprise Blvd. at I-80	Widen Enterprise Blvd. interchange from 2 to 4 lanes and modify ramps.	2005
West Sacramento	Harbor Blvd.	West Capitol Ave. to Industrial Blvd., widen from 4 to 6 lanes.	2005
West Sacramento	Harbor Blvd. at US 50	Harbor Blvd. interchange--Widen overcrossing from 4 to 6 lanes and revise ramps.	2005
West Sacramento	Industrial Blvd.	Harbor Blvd. to Terminal Ave., widen from 4 to 6 lanes.	2010
West Sacramento	Industrial Blvd.	Widen from 2 to 6 lanes from Jefferson Blvd. to the Palamidessi Bridge at the Barge Canal.	2010
West Sacramento	Industrial Blvd.	Widen the Palamidessi Bridge from 3 to 4 lanes.	2010
West Sacramento	Jefferson Blvd. at US 50	Jefferson Blvd. interchange - expand the ramps and signals from 1 to 2 lanes; add ramp metering and turn lanes, and related street closures.	2010
West Sacramento	Reed Ave. at I-80	Widen ramps and install ramp meters at Reed Avenue interchange.	2005
West Sacramento	South River Rd. at US 50	Install ramp meters and modify ramp design at South River Rd. Interchange.	2005
West Sacramento	State Route 275	Conversion of SR 275 from freeway to a signalized arterial.	2005
Yolo County	Yolo County Transportation District	Increase bus service in Yolo County as assumed in the base case (18 buses for expansion)	2010
Yolo County	Yolo County Transportation District	Purchase 21 new buses for fleet replacement.	2010
Yolo County	County Road 32A	Bike lanes for 2.8 miles on County Road 32A from Davis city limits to Yolo Causeway bike path (north of I-80).	2010
Yolo County	Chiles Road	Bike lanes for 2.7 miles on Chiles Road from Davis city limits to Yolo Causeway bike path (south of I-80).	2010

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